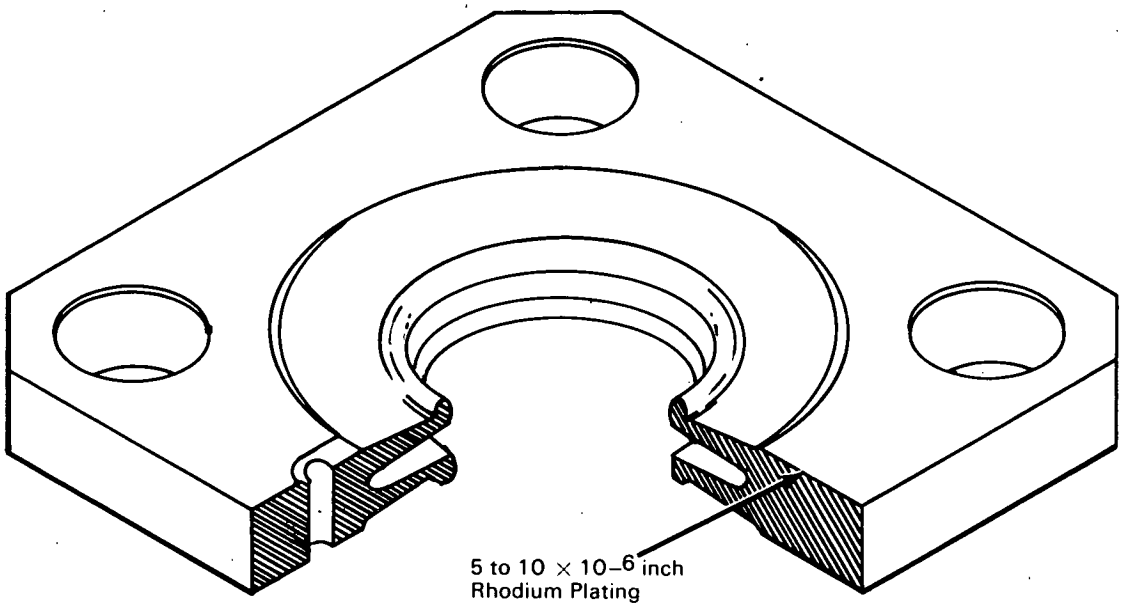
December 1969

Brief 69-10544

# NASA TECH BRIEF

NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

## Rhodium-Plated Barrier Against High-Temperature Fusion Bonding




A technique for electroplating rhodium has contributed significantly to the solution of the fusion bonding problem. Fusion bonding or pressure welding occurring at high temperature (1000°F or above) has been a particular problem with copper, silver, and gold-plated surfaces.

The development described in this brief has application to the automotive, turbine manufacturing, and vacuum furnace industries.

The technique provides for a very thin ( $5 \times 10^{-6}$ inch) rhodium electro-deposit on the surface subject to bonding action. This plating has no effect on the pliability characteristics of the plated surface. The rhodium coating also eliminates the need for corrosion-resistant protection on silver surfaces.

A specification included with the report gives details on materials, procedures, and processes, including safety precautions.

**Note:**

Requests for further information may be directed to:
Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B69-10544

**Patent status:**

No patent action is contemplated by NASA.

Source: R. C. Janis and C. A. Kuster of
North American Rockwell Corporation
under contract to
Marshall Space Flight Center
(MFS-92155)

Category 05

This document was prepared under the sponsorship of the National Aeronautics and Space Administration. Neither the United States Government nor any person acting on behalf of the United States Government assumes any liability resulting from the use of the information contained in this document, or warrants that such use will be free from privately owned rights.